

WE CLAIM

1. A method for providing an image, comprising:
exposing a first group of pixels located at a first location to light, during an intermediate exposure period, to provide analog signals representative of the light;
storing the analog signals at an analog memory; and
writing back the stored analog signals to a second group of pixels located at a second location; whereas a relationship between the first and second locations is responsive to an estimated inter-image shift.
2. The method of claim 1 whereas the stage of exposing is preceded by a stage of determining the intermediate exposure period.
3. The method of claim 2 wherein the intermediate exposure period is responsive to the estimated inter-image shift.
4. The method of claim 2 wherein the intermediate exposure period is responsive to a capacity of the analog memory.
5. The method of claim 1 wherein the stages of exposing, storing and writing back are repeated to provide a picture.
6. The method of claim 1 wherein multiple iterations of the stages of exposing, storing and writing back provide an intermediate image.
7. The method of claim 1 wherein the stages of stages of exposing, storing and writing back are repeated until multiple intermediate images are provided.
8. The method of claim 7 wherein an amount of intermediate images is responsive to an aggregate exposure period.
9. The method of claim 1 wherein the first group of pixels is a pixel row.
10. The method of claim 1 wherein the first group of pixels is a pixel column.
11. A method for updating a first pixel, the method comprises:
exposing a second pixel located at a second location to light to provide an analog signal representative of the light;
storing the analog signal at an analog memory; and

writing back the stored analog signal to the first pixel located at a first location; whereas a relationship between the first and second locations is responsive to an estimated inter-image shift.

12. The method of claim 11 wherein the first pixel differs from the second pixel.

13. The method of claim 11 wherein the first pixel equals the second pixel.

14. The method of claim 11 whereas the stored analog signal differs from a reset signal.

15. A pixel, comprising:

a light sensitive element adapted to provide an analog signal in response to received light; and

a first component adapted to receive a write-back signal representative of previously received light and to alter a condition of the light sensitive element in response to the write-back signal.

16. The pixel of claim 15 further comprising a second component, capable of providing an output signal representative of the analog signal.

17. An apparatus for camera shake compensation, the apparatus comprising:

a first group of pixels located at a first location, adapted to receive light during an intermediate exposure period, and in response to provide analog signals representative of the light;

an analog memory, adapted to store the analog signals; and

a write back circuitry, adapted to write back the stored analog signals to a second group of pixels located at a second location; whereas a relationship between the first and second locations is responsive to an estimated inter-image shift.

18. The apparatus of claim 17 further comprising a controller adapted to control the operation of the write-back circuitry, analog memory and first and second group of pixels.

19. The apparatus of claim 17 further comprising a controller adapted to estimate the inter-image shift.

20. The apparatus of claim 19 whereas the controller is further adapted to determine the intermediate exposure period.

21. The apparatus of claim 20 wherein the intermediate exposure period is responsive to the estimated inter-image shift.
22. The apparatus of claim 20 wherein the intermediate exposure period is responsive to a capacity of the analog memory.
23. The apparatus of claim 17 wherein the apparatus is adapted to repeat an exposure of the first group of pixels to light, a storage of analog signals and a write-back of the analog signals to provide a picture.
24. The apparatus of claim 17 wherein apparatus comprises an array of pixels that comprises at least the first and second groups of pixels.
25. The apparatus of claim 24 whereas the apparatus is adapted to repeat an exposure of different groups of pixels to light, storage of analog signals and a write-back of the analog signals such as to provide an intermediate image.
26. The apparatus of claim 24 whereas the apparatus is adapted to repeat an exposure of different groups of pixels to light, storage of analog signals and a write-back of the analog signals such as to provide multiple intermediate images.
27. The apparatus of claim 26 wherein an amount of intermediate images is responsive to an aggregate exposure period.
28. The apparatus of claim 17 wherein the first group of pixels is a pixel row.
29. The apparatus of claim 17 wherein the first group of pixels is a pixel column.
30. An apparatus for camera shake compensation, the apparatus comprising:
 - a two dimensional array pixels, whereas multiple pixels of the array are adapted to receive light during an intermediate exposure period, and in response to provide analog signals representative of the light; and are further adapted to alter their condition in response to a reception of a right-back signals representative of previously received light;
 - an analog memory, adapted to receive and store analog signals representative of light received a first group of pixels within the pixel array; and
 - a write back circuitry, adapted to write back stored analog signals received from the first group to a second group of pixels located at a second location;

whereas a relationship between the first and second locations is responsive to an estimated inter-image shift.

31. The apparatus of claim 30 whereas the first and second groups are pixel rows.

32. The apparatus of claim 30 whereas the first and second groups are pixel columns.

33. The apparatus of claim 30 adapted to repeat an exposure of various groups of pixels to light, a storage of analog signals and a write-back of the analog signals until a predefined portion of the pixel array receives write-back signals.

34. The apparatus of claim 30 wherein the apparatus is adapted to repeat an exposure of the first group of pixels to light, a storage of analog signals and a write-back of the analog signals to provide a picture.

35. The apparatus of claim 30 whereas the apparatus is adapted to repeat an exposure of different groups of pixels to light, storage of analog signals and a write-back of the analog signals such as to provide an intermediate image.

36. The apparatus of claim 30 whereas the apparatus is adapted to repeat an exposure of different groups of pixels to light, storage of analog signals and a write-back of the analog signals such as to provide multiple intermediate images.

37. A method for providing an image, comprising:

 exposing a first group of pixels located at a first location to light, during an intermediate exposure period, to provide analog signals representative of the light;

 transferring the analog signals to a second group of pixels located at a second location; whereas a relationship between the first and second locations is responsive to an estimated inter-image shift.

38. The method of claim 37 further comprising exposing the second group of pixels located at the second location to light, for further intermediate exposure period.